

erence section is also helpful, directing students of our endangered flora to further taxonomic or ecological publications on individual species.

This volume is a must for any rare plant enthusiast, environmental consultant, or agency biologist who deals with endangered, threatened, or rare plants. It is the first step for many professionals faced with conducting a rare plant field survey. The data in the *Inventory* are backed by herbaria and field work records contributed by the Society and other botanists and housed in the Department of Fish and Game's Natural Diversity Data Base. As with any publication of this type, however, it is out of date even before it is off the presses. CNPS recognized this fact, promoting the *Inventory* as a place to start when needing rare plant data, while encouraging use of the Data Base for the latest locational information. CNPS goes one step further, including an excellent discussion by member and botanist James R. Nelson on rare plant inventorying techniques, emphasizing that no survey is complete with only book-learned facts—one must get to the field before deciding on presence or absence of rare plants at a site.

Habitat information is just about the only facet of data missing from these concise species entries. A coding system for habitats is being contemplated by the authors for the next edition. It would be a welcome inclusion. I found only one organizational drawback of the book—its organization by species instead of by geographical location. Users needing to determine which species are found within a particular geographic area must essentially read the entire book, picking out the appropriate quad codes or county names. To reverse the information and print it by quadrangle map with all the species found therein would be marvelous but would just about double the size and cost of the document. It also would be quickly out of date and seeing such lists could lull uninformed consultants or botanists into a false sense of security about the presence or absence of endangered plants. A potential compromise for this problem may be county lists of species, giving those in need a starting point for further investigation.

Students of rare plant distribution will revel in the information crunched into these pages; in today's world of high-priced books, I can't think of a wiser use of funds to start or complete a library on California's endangered and rare plants.—SUSAN COCHRANE, Coordinator, Endangered Plant Program, California Dept. Fish and Game, 1416 9th Street, Sacramento 95814.

The Botany and Natural History of Panama: La Botanica e Historia Natural de Panama. Edited by WILLIAM G. D'ARCY and MIREYA D. CORREA A. Published as volume 10 of Monographs in Systematic Botany from the Missouri Botanical Garden. 455 pp. \$48.00 + 4% shipping. ISBN 0-915279-03-7 (paperbound). (Available from Dept. 11, MBG, P.O. Box 299, St. Louis, MO 63166.)

In April 1980, a symposium was convened in Panama to signal the completion of the Missouri Botanical Garden's Flora of Panama project, the publication of which was begun in 1943. That it took nearly 40 years is some indication of the overwhelming diversity in the tropics and the amount of work necessary to try to bring into focus even the basic taxonomy of the tropical biota. The editors deserve high praise for this volume; it reflects what must have been a highly successful symposium.

The volume does not cover, or try to, the spectrum of organisms one might consider significant in tropical regions (bats, for instance, are not covered in any of the 48 articles), but coverage does include zoology, anthropology-ethnology-linguistics, meteorology (one paper), demography and man's influence on the landscape, and conservation, in addition to a broad range of botanical topics. The gaps may reflect merely that the editors are completely at the mercy of whatever symposium participants were available. In a sense, this is a beautifully complementary volume to Janzen's Costa Rican Natural History, a mini-encyclopedia that highlights particular creatures in the forests and details of what they do, also based to some extent on what specialists were available.

The first section of the book includes papers on particular groups of plants and animals (monocots, grasses, orchids, lianas, pteridophytes, mosses, and mangroves; termites, reptiles, birds, and the tamarin), followed by perhaps the strongest part, plants and geography. Those rash enough to consider working directly in the tropical forest canopy will need to be aware of Sugden's technique of constructing aerial walkways. The second part, The Interactions, covers topics in pollination, phenology, dispersal, regeneration, and the ecology and evolution of *Heliconia*.

Contributions in part three, the Human Aspect, were new ground for me and will be for most botanists, perhaps with the exception of the ethnobotany, but I found them all interesting and well worth having just for the general information. Did you know, for instance, that the Kuna Indians have four different vocabularies (and grammars) with which to speak in specific contexts, or that leaves of *Piper auritum* are used as bait in fish weirs in some Panamanian rivers?

Articles in English have brief Spanish summaries interpolated here and there in the text, and Spanish articles are similarly paraphrased in English. Most of the Spanish articles are in the "Modern Man and the Landscape" section.

There are few typographical errors, but one is significant: 12 references have been deleted from the Rockwood literature cited (Seed Size and Plant Habit).—C. DAVIDSON, Idaho Botanical Garden, P.O. Box 2140, Boise 83701.